WHAT IS CLAIMED IS:

1. A method for casting a polyacrylamide gel in a plastic gel enclosure, said method comprising

(a) forming an aqueous solution of a monomer mixture comprising acrylamide, a crosslinking agent, and an oxygen scavenger which is a member selected from the group consisting of sodium sulfite, sodium bisulfite, sodium thiosulfate, sodium lignosulfate, ammonium bisulfite, hydroquinone, diethylhydroxyethanol, diethylhydroxylamine, methylethylketoxime, ascorbic acid, erythorbic acid, and sodium erythorbate; and

(b) polymerizing said monomer mixture in a plastic gel enclosure to form a polyacrylamide gel.

2. A method in accordance with claim **1** in which said monomer mixture further comprises a free radical initiator.

3. A method in accordance with claim **1** in which said oxygen scavenger is a member selected from the group consisting of sodium sulfite, sodium bisulfite, sodium thiosulfate, sodium lignosulfate, and ammonium bisulfite.

4. A method in accordance with claim **1** in which said oxygen scavenger is a member selected from the group consisting of sodium sulfite and sodium bisulfite.

5. A method in accordance with claim **1** in which said oxygen scavenger is sodium sulfite.

6. A method in accordance with claim **1** in which the concentration of said oxygen scavenger in said aqueous solution is from about 1 mM to about 30 mM.

7. A method in accordance with claim **3** in which the concentration of said oxygen scavenger in said aqueous solution is from about 1 mM to about 30 mM.

8. A method in accordance with claim **3** in which the concentration of said oxygen scavenger in said aqueous solution is from about 3 mM to about 15 mM.

9. A method in accordance with claim **1** in which said plastic gel enclosure is a member selected from the group consisting of polycarbonate, polystyrene,

stryene-acrylonitrile copolymer, polyethylene terephthalate, polyethylene terephthalate glycolate, and poly(ethylene naphthalenedicarboxylate).

10. A method in accordance with claim **1** in which said monomer mixture comprises acrylamide and N,N′-methylene-bisacrylamide in aqueous solution, the total of said acrylamide and N,N′-methylene-bisacrylamide amounting to from about 5 g to about 30 g per milliliter of said aqueous solution.

11. A method in accordance with claim **1** in which said monomer mixture comprises acrylamide and N,N′-methylene-bisacrylamide at a combined concentration of from about 10 g to about 20 g per milliliter of said aqueous solution.

12. A method in accordance with claim **10** in which the weight ratio of acrylamide to N,N′-methylene-bisacrylamide is from about 10:1 to about 100:1.

13. A method in accordance with claim **10** in which the weight ratio of acrylamide to N,N′-methylene-bisacrylamide is from about 25:1 to about 50:1.